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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,092	08/23/2001	Wai Kwan Cheung	P/3987-3	9858

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NEW YORK, NY 100368403

EXAMINER

NGUYEN, DANNY

ART UNIT PAPER NUMBER

2836

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/938,092	Applicant(s) CHEUNG, WAI KWAN	
	Examiner Danny Nguyen	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (USPN 5,998,863) in view of Schaer et al (USPN 6,522,930), and further in view of Lavochkin et al (USPN 5,829,516).

Regarding claim 1, Kobayashi et al disclose a heat sink circuit (such as shown in fig. 1 and 6) comprises at least one U-shaped aluminum tube (such as 41) with open ends, a sealed vacuum vessel (20 detailed shown in fig. 6) with orifices into the vessel communicating with the open ends of the tubes, inner fins (21) which are absorbent and are impregnated with a refrigerated liquid are disposed in the vessel (e.g. col. 7, lines 20-25). Kobayashi et al do not disclose fibers as claimed. Schaer et al disclose fibers, which are impregnated in a refrigerant liquid and are absorbent (col. 6, lines 34-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the fins of Kobayashi with fibers as taught by Schaer in order to improve heat absorbency. However, the combination of Kobayashi and Schaer do not

Art Unit: 2836

disclose the tube is made of copper. Lavochkin discloses a heat sink circuit (e.g. fig. 7 and 8) comprises a U shaped tube (74) is made of copper (col. 3, line 39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the aluminum tube of Kobayashi and Schaer with a copper tube as taught by Lavochkin because Lavochkin teaches that copper tube provides high thermal conductivity (col. 2 and 3, lines 67-2).

Regarding claims 2, 7, Kobayashi et al disclose the vessel (20 shown in fig. 6) has an upper end region (201) and the orifices communicating with the tube in the upper end of the vessel.

Regarding claim 5, Kobayashi et al disclose the vessel (20 shown in fig. 6) has an upper haft casing (201) and lower haft casing (202) secured together.

Regarding claim 6, Kobayashi et al disclose the vessel (20 shown in fig. 6) the lower haft casing (202) including a projecting level surface for communicating with an object for heat transfer (see fig. 9 and 10).

Regarding claims 8 and 9, Kobayashi et al discloses the sealed vessel (20) is secured by welding the upper portion (201) and lower portion (202) together (see col. 6, lines 17-43). Kobayashi et al. do not disclose using silicone gel to seal the vessel. However, it would have been obvious to one having ordinary skill in the art to utilize any known material such as silicone gel in the system of Kobayashi et al to any as long as it provide proper sealing function. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combinations of Kobayashi, Schaer, Lavochkin in view of Tajima (USPN 5,647,430). The combinations disclose all limitations of claim 1 except for having a fan and supporting frame as claimed. Tajima discloses a fan (45) and supporting frame (as shown in fig. 6). It would have been obvious to one of ordinary skill in the art to have modified the cooling circuit of the combinations with fan and supporting frame as taught by Tajima in order to blow out the heat generated from components (Tajima, col. 4, lines 61-62).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combinations of Kobayashi, Schaer, Lavochkin in view of Kyees (USPN 5,743,107). The combinations disclose all limitations of claim 1 except for having the refrigerated liquid being a glycol. Kyees disclose using a refrigerated liquid as glycol (see col. 3, lines 33-34). It would have been obvious to one having skill in the art to modify the refrigerated liquid in the cooling circuit of the combinations with a glycol liquid as taught by Kyees in order to cool down heat generating components in the device.

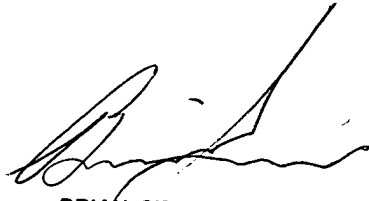
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2800X36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/3/2004



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